UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,160	12/15/2000	Jung-Kwon Heo	1293.1159	8106

49455 7590 03/21/2006

STEIN, MCEWEN & BUI, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005

EXAMINER	
LERNER, MARTIN	

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/736,160	HEO ET AL.	
	Examiner	Art Unit	
	Martin Lerner	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 39 and 41 to 51* is/are pending in the application.

4a) Of the above claim(s) *9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 to 8, 16 to 23, 30 to 33, 48, 49, and 51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicants timely traversed the restriction requirement in the reply filed on 29 April 2005.

This application contains claims 9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50 drawn to an invention nonelected with traverse in the reply filed on 29 April 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 to 7, 16 to 22, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.*

Concerning independent claim 1, *Tanaka et al.* discloses a recording medium, comprising:

"predetermined recording units, each recording unit having audio data recorded" – cells N ("predetermined recording units") have audio streams recorded in audio packs A ("audio data recorded") (column 17, lines 22 to 25: Figures 13, 19, 48, and 49);

"data packs designated to store additional data relating to the audio data, each of the data packs being recorded in predetermined locations in corresponding ones of the recording units of the audio data, the predetermined locations being a same position in each of the recording units relative to a beginning of the recording unit" – the first pack in each ACB unit ACBU is an audio control pack A-CONT; an audio control pack A-CONT in each ACB unit ABCU in a DVD-Audio is located at a place corresponding to a third pack in a VCB unit VCBU (column 17, lines 22 to 37: Figures 13, 19, 48, and 49); a control audio pack A-CONT is a data pack "designated to store additional data related to the audio data"; an audio control pack A-CONT has headers, audio character display (ACD) information, audio search data (ASD), and substream identification information (column 18, lines 11 to 22: Figure 15); A-CONT control packs are placed in a first or third position of an ACBU or VCBU, which is "the predetermined locations being a same position in each of the recording units relative to a beginning of the recording unit".

Concerning independent claim 1, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet

stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as suggested by *Pinder et al.* in a recording medium for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning independent claim 16, *Tanaka et al.* discloses a reproducing method, further comprising:

"reading data from the recording medium in units of the recording units" – a player operates on a DVD-Audio 1; drive unit 2 reads out a signal from the DVD-Audio 1 (column 57, lines 1 to 28: Figure 94);

"reproducing the audio data and the additional data recorded in the read recording units, after relating the additional data to the audio data, the additional data recorded in data packs" – drive unit 2 includes a demodulator, and outputs the demodulation-resultant signal to the reproduced signal processing unit 17 as a reproduced signal (column 57, lines 22 to 28: Figure 94); reproduced information includes real-time information as audio character display (ACD) information

("reproducing . . . the additional data"), which is related to the audio data (column 58, lines 21 to 34: Figure 94).

Concerning independent claim 16, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as suggested by *Pinder et al.* in a reproducing method for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning independent claim 48, *Tanaka et al.* discloses a reproducing method, further comprising:

"reading the predetermined recording units" – a player operates on a DVD-Audio 1; drive unit 2 reads out a signal from the DVD-Audio 1 (column 57, lines 1 to 28: Figure 94);

"demultiplexing the predetermined units to separate the audio data from data packs having the additional data based upon the data packs being in a predetermined location in the corresponding recording unit relative to a beginning of the recording unit" – the reproduced signal processor circuit 17 includes an audio and RTI pack detector 9 which receives the reproduced signal from the drive unit 2, and detects audio packs A and real-time information packs RTI in the reproduced signal (column 57, line 58 to column 58, line 34: Figure 94); real-time information packs RTI are "data packs having additional data"; still-picture detector 3 detects video packs V and still-picture packs SPCT, and audio and RTI detector 9 detects audio packs A and RTI packs; implicitly, detecting still picture, video, audio, and RTI packs involves "demultiplexing the predetermined units to separate the audio data from data packs having additional data" (column 57, lines 29 to 67: Figure 94); the first pack in each ACB unit ACBU is an audio control pack A-CONT; an audio control pack A-CONT in each ACB unit ABCU in a DVD-Audio is located at a place corresponding to a third pack in a VCB unit VCBU (column 17, lines 22 to 37: Figures 13, 19, 48, and 49); an audio control pack A-CONT has headers, audio character display (ACD) information, audio search data (ASD), and substream identification information (column 18, lines 11 to 22: Figure 15); A-CONT control packs are placed in a first or third position of an ACBU or VCBU, which is "a

predetermined location in the corresponding recording unit relative to a beginning of the recording unit".

Concerning independent claim 48, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as taught by *Pinder et al.* in a reproducing method for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning claims 2 and 17, *Tanaka et al.* discloses audio packs A and audio control packs A-CONT in each ACB unit ACBU (column 17, lines 22 to 25: Figures 13, 19, 48, and 49); audio packs A have recorded audio data, and audio control packs A-CONT are recorded separately with audio control information.

Concerning claims 3 and 18, *Tanaka et al.* discloses audio packs A and audio control packs A-CONT in each ACB unit ACBU (column 17, lines 22 to 25: Figures 13, 19, 48, and 49); audio control packs A-CONT do not contain any audio data that is reproduced, as audio control packs A-CONT contain only control information; control data need not be audibly or visually reproduced, so it is "additional data" that "does not have . . . to be reproduced" with audio data from audio packs A.

Concerning claims 4, 5, 19, and 20, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); real-time information includes audio character display (ACD) information, which is displayed (column 58, lines 21 to 34); audio character display (ACD) information is text describing a tune name (column 18, lines 11 to 39: Figures 15 and 16); audio search data (ASD) synchronizes a present time to an absolute time of a related title (column 18, lines 11 to 39: Figures 15 and 16; column 19, lines 11 to 35: Figure 18).

Concerning claims 6 and 21, *Tanaka et al.* discloses each audio control pack A-CONT stores managing information representing a title and a play time (column 20, lines 10 to 19); audio search data (ASD) has playback time of a related track and an absolute time of the related title (column 19, lines 11 to 35: Figure 18); real-time information is read from real-time information packs RTI to display audio character display information (column 58, lines 21 to 34), thus, titles are displayed as text when recording units corresponding to the titles are played.

Concerning claims 7 and 22, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); each ACBU or VCBU has a plurality of audio packs A ("each recording unit has a plurality of audio packs") (Figures 13, 19, 48, and 49); an audio control pack A-CONT is located in a first position in each ACBU (Figures 13, 19, 48, and 49).

Concerning claim 49, *Tanaka et al.* discloses the reproduced signal processor circuit 17 includes an audio and RTI pack detector 9, which receives the reproduced signal from the drive unit 2, and detects audio packs A and real-time information packs RTI in the reproduced signal (column 57, line 58 to column 58, line 34: Figure 94); thus, RTI packs (or audio control packs A-CONT) are separated from audio packs A for processing.

Claims 8, 23, 30 to 33, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.* as applied to claims 1 and 16 above, and further in view of *Ema et al.*

Concerning independent claims 30 and 51, *Tanaka et al.* discloses a reproducing apparatus with an audio signal processor and an RTI signal processor (Figure 94), but does not expressly show all the structural details for a reproducing apparatus. However, *Ema et al.* discloses a reproducing apparatus further comprising:

"a reproducing controller reading an audio object (AOBU) which is one of the recording units" – system controller 100 provides control signals for controlling an audio reproducing process (column 9, lines 22 to 45: Figure 4);

"a demultiplexor demultiplexing an audio pack in which audio data is recorded and an RTI pack in which additional data is recorded, from the read AOBU" – demultiplexer 86 extracts audio packs 230 and RTI packs 231; RTI packs 231 contain RTI data (including text information, tempo information 53 and beat information 54) (column 9, lines 22 to 46: Figures 1 and 4);

"an audio signal processor decoding the audio pack demultiplexed by the demultiplexor to output the audio data stored in the audio pack" – audio decoder 93 decodes audio information from audio packs 230 (column 9, lines 22 to 46: Figures 1 and 4);

"an RTI signal processor decoding the RTI pack demultiplexed by the demultiplexer to output additional data stored in the RTI pack in relation to the audio data from the audio pack" – RTI decoder 96 decodes RTI data output from demultiplexer 86 to provide beat information (column 9, lines 22 to 46: Figures 1 and 4).

Concerning independent claims 30 and 51, one skilled in the art would know that still picture, video detector pack 3A and audio, RTI pack detector 9 are equivalent to a demultiplexor, and control unit 23 is equivalent to a reproducing controller in *Tanaka et al.* (Figure 94) However, *Ema et al.* teaches a related apparatus and method of reproducing music together with information representing beat of music, where a reproducing apparatus enables generation of a signal representing tempo of music. (Column 5, Lines 3 to 8) It would have been obvious to one having ordinary skill in the art to include the elements of an audio reproducing processor as taught by *Ema et al.* in

the signal processing apparatus of *Tanaka et al.* for the purpose of reproducing beat information for music.

Concerning claims 8, 23, and 33, *Tanaka et al.* discloses that an audio control pack A-CONT, corresponding to a real-time information (RTI) pack is in a first location with respect to an ACBU, but in a third position with respect to a VCBU. (Figures 13 and 48) Thus, embodiments are disclosed where an A-CONT pack or an RTI pack is offset by two units from a cell head. It is a matter of design choice exactly where an A-CONT pack or RTI pack is located in a cell N. *Tanaka et al.* suggests an A-CONT pack may be located at a first or third position for each cell, but does not expressly disclose placing an A-CONT pack in a second position. However, variable offset would be an obvious expedient of design choice, in the absence of unexpected results. The most logical place to put a control pack would be in a first position, but as *Tanaka et al.* also suggests putting a control pack in a third position, it would be an obvious expedient to place a control pack in a second position, as a matter of design choice, in the absence of unexpected results.

Concerning claim 31, *Tanaka et al.* discloses each audio control pack A-CONT stores managing information representing a title and a play time (column 20, lines 10 to 19); audio search data (ASD) has playback time of a related track and an absolute time of the related title (column 19, lines 11 to 35: Figure 18); real-time information is read from real-time information packs RTI to display audio character display information (column 58, lines 21 to 34), thus, titles are displayed as text when recording units corresponding to the titles are played.

Concerning claim 32, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); each ACBU or VCBU has a plurality of audio packs A (Figures 13, 19, 48, and 49); an audio control pack A-CONT is located in a first position in each ACBU (Figures 13, 19, 48, and 49).

Response to Arguments

Applicants' arguments filed 30 January 2006 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Morris discloses that packet stuffing is an element of an MPEG-2 Specification. (Column 10, Line 66 to Column 11, Line 26)

Sawabe et al. and Gayrard disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML
3/14/06

Martin Lerner
Examiner
Group Art Unit 2654